Abstract

A resonance system (14, 15) is formed by a light incident side reflection mirror and a light exiting side reflecting mirror, arranged parallel to each other. The light incident on an incident side reflective mirror (14) is propagated in the outward path direction or in the backward path direction so that the light is set in a resonant state. The light in the resonant state in the resonance system (14, 15) is phase-modulated, responsive to a modulating signal supplied from an oscillating device (16) by a light modulation device (2) arranged between the light incident side reflective mirror (14) and the light exiting side reflective mirror (15). The oscillating device oscillates the modulating signal of a frequency f_m. A plural number of sidebands, centered about the frequency of the incident light, are generated with an interval between neighboring sidebands equal to the frequency of the modulating signal, such as to modulate the phase of the light in the outward path direction and the phase of the light in the backward path direction.